the optical monitor, and Fig. 13 is a diagram showing one example of a difference in final transmittance distribution between an optical component in which the thickness adjustment by using the optical monitor is performed and an optical component in which the thickness adjustment by using the optical monitor is not performed.

IN THE CLAIMS

Please cancel claims 5-8 in favor of new claims 9-16. Please add new claims 9-16 as follows:

9. (New) An optical component producing method for forming a multi-layer film, which is composed of alternately stacked layers different in optical characteristic, on a base, the method comprising:

measuring an optical characteristic of the optical component obtained by forming the multi-layer film on the base, wherein the measurement step comprises the step of measuring a transmittance of the optical component;

controlling, on the basis of the measured optical characteristic of the optical component, a thickness of a portion of the multi-layer film to be formed on the base by terminating the film formation at the portion of the multi-layer film when the measured transmittance of the optical component is changed to be decreased; and

removing a layer portion formed during a period of time from a time point when the increase/decrease of the measured mean light transmittance of the optical component is stopped to a time point when the measured mean light transmittance is changed to be decreased.

10. (New) A method for forming an optical component, comprising:

(i) depositing a plurality of optical layers on a base to form a surface; and

(ii) controlling a thickness of no more than one layer by

(a) depositing a tuning layer on the surface of the plurality of optical layers to form a stack, wherein the tuning layer is the no more than one layer and defines a thickness,

(b) measuring an optical characteristic of the stack to obtain a first optical characteristic value,

(c) measuring the optical characteristic of the stack to obtain a second optical characteristic value,

(d) determining whether the second optical characteristic value has decreased as compared to the first optical characteristic value,

(e) if the second optical characteristic value has not decreased, continuing the depositing of the tuning layer to add to the stack and returning to (ii)(b), and if the second optical characteristic measured has decreased, terminating the depositing of the tuning layer.

11. (New) The method of claim 10, wherein if the optical characteristic measured has decreased, the method further comprising:

removing a portion of the tuning layer formed during a period of time, wherein the period of time is defined from a time point when an increase/decrease of the second optical characteristic measured of the stack is stopped to a time point when the second optical characteristic measured is changed to be decreased.

12. (New) The method of claim 10, wherein the tuning layer defines a refractive index that is higher than a refractive index of at least one optical layer of the plurality of optical layers.

13. (New) The method of claim 10, further comprising:

depositing at least one optical layer on the tuning layer.

14. (New) The method of claim 13, further comprising:

depositing no more than one optical layer on the tuning layer.

15. (New) The method of claim 10, wherein the plurality of optical layers comprise at least nine optical layers, the method further comprising:

depositing at least one optical layer on the tuning layer.

16. (New) The method of claim 10, wherein the plurality of optical layers are alternately stacked optical layers different in optical characteristic.